Tangible problems encountered when working with REICAT and MARC 21: recording General and Specific Material Designations

Agnese Galeffi

This article is aimed at prompting reflection and pointing out the various problems which arise when a cataloguer using REICAT and MARC 21 seeks to register general and specific designations of materials in some of the fields encountered in the electronic format. The resulting mappings make it clear how a number of problems deriving from the respective tools' different underlying design concepts can crop up. The Regole Italiane di Catalogazione (REICAT) were published in June 2009 by the Istituto Centrale per il Catalogo Unico delle Biblioteche Italiane e per le Informazioni Bibliografiche (ICCU) as a result of the work carried out by the Commissione per l'aggiornamento ed eventuale semplificazione delle regole per la compilazione del catalogo alfabetico per autori delle biblioteche italiane.[1] Formed in 1996, the Commission, in which various members of the ICCU and other experts have participated, was aimed at revising the Regole Italiane di Catalogazione per Au-

[1] http://www.iccu.sbn.it/opencms/opencms/en/main/attivita/gruppilav_commissioni/pagina_94.html.

JLIS.it. Vol. 2, n. 1 (Giugno/June 2011).
DOI: 10.4403/jlis.it-4598

tore (RICA) published in 1979, following their approval by the ministry concerned in 1978. Numerous factors led to a recognition of RICA's obsolescence and the consequent formulation of strategies and criteria for the renewal of REICAT. To give an idea of the issues concerned, we can summon to mind various standards and international documents such as International Standard Bibliographic Description (ISBD), Guidelines for Authority and Reference Records (GARR), Functional Requirements for Bibliographic Records (FRBR), Functional Requirements for Autority Data (FRAD), the ISO norms, and the International Cataloguing Principles. The Commission, in defining the REICAT norms, also sought to take into account electronic environments which exert an influence on both the cataloguer when he/she adds catalographic data, and the user during the search and consultation phase.

REICAT currently represents the code in force in Italy. It is the code applied by the Servizio Bibliotecario Nazionale (SBN), the National Library Service, the network in Italy that boasts the largest number of subscribing libraries,[2] and the most significant catalogue in numerical terms. Subsequent to issuing the Circolare per l'applicazione delle REICAT in SBN (ICCU, *Circolare per l'applicazione delle REICAT in SBN*),[3] the ICCU has produced a document which shows how to apply the norms, taking into account the limits imposed by the SBN MARC protocol (*Documentazione Specifiche SBN-MARC*).[4] The REICAT norms, despite the fact their development was originally desired by the same body that manages and promotes the SBN system, take the form of an ensemble of nationally valid rules that can also be utilized by other libraries which are not part

[2]http://www.iccu.sbn.it/opencms/opencms/it/main/sbn/poli_biblioteche.

[3]http://www.iccu.sbn.it/opencms/export/sites/iccu/documenti/REICAT-SBN_14_2_10rev_ICCU.pdf.

[4]http://www.iccu.sbn.it/opencms/opencms/it/main/sbn/evoluz_indice_sbn/pagina_147.html.

of the SBN system, or which 'communicate' even if they do not use the said format, thanks to the goals foreseen by the project devised for the evolution of the SBN Index.[5]

In Italy a certain number of libraries have adopted the MARC 21 electronic format.[6] However, the UNIMARC format remains the most commonly used in Italy, other than the already mentioned SBN MARC. For this reason, in 2009 the MARC 21 (GUMARC 21) Users' Group was formed which aimed to unite the institutes that employ this format, in addition to those which were simply interested in it.[7] For this reason, reported here are the results of an analysis aimed at verifying whether or not REICAT's prescriptions can be correctly and unambiguously registered within the MARC21 format, which was updated (Update No. 12 October 2010) so as to allow it to respond adequately, in particular, to the changes introduced by Resource Description & Access (RDA) (*Resource Description and Access*). The mappings presented here – and the reflections they prompt – are intended by the author to shed light not on the inadequacy of a particular format or catalographic code, but instead on the concrete problems which arise when a cataloguer, in the course of his/her work, seeks to achieve a functional coexistence of each of the tool's respective requirements. Furthermore, the existence of opacs and,

[5]Among the project's chief objectives is the "opening of the SBN index to the management systems of non-SBN libraries which utilize the most widely disseminated bibliographic formats (UNIMARC, MARC 21) by means of the creation of a standard communications interface that allows software developers to furnish other communications applications along with the Index, thereby broadening the influence and distribution of the services offered by the central system and relative users" http://www.iccu.sbn.it/opencms/opencms/it/main/sbn/evoluz_indice_sbn.

[6]MARC (MAchine Readable Cataloging) was introduced in 1966 in the form of the Marc Pilot Project. This subsequently became, in 1973, the ISO 2709 norm Format for bibliographic information interchange on magnetic tape. In the 1990s, MARC 21 was created by merging the US format with the Canadian one.

[7]GUMARC21. http://www6.unicatt.it/dnn-biblioteca/gumarc21/Home.aspx.

in general, of discovery systems that contain information produced according to different rules and formats, requires that our profession questions itself on the results of its work in this mixed context. This should be the case not so much – not only - in order to advance the discipline as to assume the correct attitude towards users, whose satisfaction should be the ultimate aim of our work.

The REICAT norms state that "in electronic catalogues, further elements (or all the information recorded) can be used for search or selection purposes, even in partial form or when combined" (*Regole italiane di catalogazione* Par. 0.1.3 C), and also that "some types of information, because of the number of entries which are usually applied, are particularly well-suited to being used as selection elements (or for exclusion, or as a "filter") when searching electronic catalogues" (Par. 0.4.4). To devise a code which, from a conceptual viewpoint, will be completely independent from electronic implications, and which, at the same time, will be eminently usable for the creation of an electronic catalogue, represents a highly complex task. For those who are asked to formulate such rules it is difficult to establish where the boundary lies between producing a universally valid code (whilst taking into account the point technology has reached), and when this exerts an influence on the applicability and the application of the said rules. The innovations used in REICAT cataloguing addressed in this article concern, in particular, the General and Specific Material Designation (GMD and SMD).

REICAT GMD in MARC21

Despite the fact that GMD is not "provided for by these norms (REICAT) as an element of the bibliographic description" (Par. 4.1.0.1), it is the subject of a dedicated list contained in Appendix C. GMD finds its application, in the search phase, as a selection element upon

which the filters of a discovery tool act and, in the display phase, as an icon or symbol which allows the user to immediately identify the particular resource type (Guerrini).[8] The fact that the GMD does not appear in the traditional areas of the bibliographic description, but instead is created for the opacs (even if Appendix C doesn't exclude the possibility of using it in "lists resulting from a search"), constrains one to reflect on the relationship between the GMD and the electronic format which has to accommodate it. If, in fact, the specific role of the GMD is that of serving as a filter in electronic catalogues, it is of fundamental importance that this function is fulfilled in an effective way and that it yields unambiguous results.

The list of general designations present in Appendix C includes:

Texts	Written (or Notated) music
Graphic material	Cartographic documents
Objects	Sound recordings
Video recordings	Electronic documents
Multimedia	

The list is, as the code itself indicates, is incomplete inasmuch as "unpublished materials or those which are not commonly found in libraries are not included, but when necessary further terms can be added" (*Regole italiane di catalogazione* Appendix C). Indeed, among the examples of the code we find one where, at the stage when the physical description area is addressed it appears as "1 puppet (designation of an object which does not find a place among those foreseen in Appendix D" (Par. 4.5.1.1 B).

[8]The problem was also pointed out by IFLA, which within the ISBD Review Group, assembled the Material Designations Study Group. http://www.ifla.org/en/node/938.

Mapping of GMD to Leader/06

A first attempt at mapping the GMD can be made by considering Leader/06, Type of Record (Table 1). The two elements, to be sure, have different objectives and areas of application, as soon as Leader/06 is used to distinguish bibliographic records created for various types of content and material. The two successive tables reporting the correspondences between the GMDs and 007 and 008 are closely connected to this one.[9]

DGM	*Leader/06*
Texts	a - Language material
Written (or notated) music	c - Notated music
Graphic documents	k - Two-dimensional nonprojectable graphic g - Projected medium
Cartographic documents	e - Cartographic material
Objects	r - Three-dimensional artifact or naturally occurring object
Sound recordings	i - Nonmusical sound recording v j - Musical sound recording
Videorecordings	g - Projected medium
Electronic documents	m - Computer file a -Language material[10]
Multimedia	

Table 1

[9]MARC identifies in 008 Level I for the 'Form of Material', in Leader/06 it is Level II, and in 007 it is Level III. "In general, the 008 and 006 are regarded as containing "bibliographic" information about a work, while the 007 is regarded as carrying information about the "physical" characteristics of the item. This dichotomy does not hold for all character position definitions, however, and the line between bibliographic and physical is not always clear in some media." (Library of Congress, *MARC 21 Bibliographic Format. Relationship of Fields 006, 007, and 008*).

[10]"Include materiale testuale stampato, su microforma ed elettronico." (*MARC 21 conciso bibliografico* Data Leader). http://www.loc.gov/marc/bibliographic/bdleader.html.

Some types of record envisaged by MARC21 are left without a satisfactory corresponding element:

t - manuscript language material, "Used for manuscript language material or a microform of manuscript language material. This category is applied to items for language material in handwriting, typescript, or computer printout including printed materials completed by hand or by keyboard. At the time it is created, this material is usually intended, either implicitly or explicitly, to exist as a single instance. Examples include marked or corrected galley and page proofs, manuscript books, legal papers, and unpublished theses and dissertations" (*MARC 21 conciso bibliografico* Data Leader);[11]

d - manuscript notated music, "Used for manuscript notated music or a microform of manuscript music" (Data Leader);

f - manuscript cartographic material, "Used for manuscript cartographic material or a microform of manuscript cartographic material" (Data Leader);

o - kit;

p - mixed materials, "Used when there are significant materials in two or more forms that are usually related by virtue of their having been accumulated by or about a person or body. Includes archival fonds and manuscript collections of mixed forms of materials, such as text, photographs, and sound recordings. Intended primary purpose is other than for instructional purposes" (Data Leader).

[11] http://www.loc.gov/marc/bibliographic/bdleader.html.

As regards the first three elements, however, the REICAT rules do not address in a specific way Manuscript Materials,[12] inasmuch as "the rules apply, so far as possible, to any type of *published* material to be included in a general catalogue" (*Regole italiane di catalogazione* Par. 1.3.1., underscoring by author). Nevertheless, with a little effort, it is not too difficult to reconcile the three elements with the categories *Texts, Written (or notated) Music and Cartographic material* respectively.

The Leader/06 'g - Projected medium', on the other hand, can be mapped by using either 'Graphic documents' or 'Videorecordings', inasmuch as this category of material can include both video recordings (including digital ones) and slides or transparencies. With REICAT, however, as can be deduced from the SMD, filmstrips and transparencies belong among 'Graphic documents', while DVDs and Video CDs find their proper place among 'Video recordings'.

Some problems also arise when mapping 'o – Kit', that is say amixture published as a single unit and composed of items of two or more types, having primarily an educational end. Even if, in a certain sense, these might seem similar to 'Multimedia', which includes documents that fit into two of the other GMD foreseen, missing from the GMD is the "educational end", and furthermore one's dealing with "documents composed of multiple units", while MARC21 refers to "a mixture [...] issued as a unit".

The 'Mixed materials' tag, because of its specific definition, cannot correspond to any material designation: the fact that it includes significant materials in two or more forms that are habitually associ-

[12] In reality, in Chapter 6, titled *Description of unpublished documents*, these are also considered by REICAT as "originals, usually unique examples, made by hand, or by using various types of equipment or apparatus, e.g. manuscripts and typescripts (including documentary material of an archival nature), drawings and other artworks, audio and video recordings, or unpublished film footage and unpublished electronic documents".

ated could suggest its suitability for the DGM 'Multimedia', which includes "documents composed of multiple units (excluding any accompanying material) that fit into at least two of the previous categories". Missing, however, is the tie-up for 'Multimedia' which is required for 'Mixed materials', i.e. the fact that one person assembled the single components, or that these (the components) concern an individual person or organization/institutional body.

On the other hand, other elements, which initially appear to be similar, can in fact conceal rather profound differences. The GMD should identify, according to what the term implies, the material, or, more precisely, as the Treccani Encyclopedia states: a particular substance which has definite characteristics. In reality, the various categories found in Appendix C do not clearly identify the particular materials that transmit information.[13] The term 'Texts', seen from one viewpoint, does not seem to refer to materials, but instead to resources which present their content in a particular form. The same observation is also valid for the 'Cartographic documents' and 'Written (or notated) music' categories. This inference does not, however, tally with the meaning attributed to the term which includes, as specified in Appendix C, 'Printed Textual Publications', whether they be paper-supported or in microform. But in cases in which a textural publication happens to be electronically supported, it falls into the 'Electronic documents' category, thereby creating a conceptual discrepancy which becomes more acute in the next table (GMD to 008 Fixed-Length Data Elements – General Information, table 2). Therefore Appendix C also does not refer in a coherent way to the type of content – indeed, the fact that microforms compose part of the GMD Texts "even if they consist chiefly in illustrations" provides the proof to support this statement (Appendix C).

The 'Written (or notated) music' category "includes printed mu-

[13]REICAT lacks of a definition of 'material'.

sical publications and written music publications in other forms (e.g. in microform, on CD-ROMs, or remotely accessible through a computer network)" (Appendix C), thereby creating a obvious incongruity. A text in electronic format belongs to the 'Electronic documents' category, while sheet music in electronic format belongs in the 'Written (or notated) music' category, and geographical maps on CD-ROMs belong in the 'Cartographic documents' category. The problem also arises in relation to successive mappings.

Mapping GMD to 008 Fixed-Length Data Elements - General Information

Once the mapping between Leader/06 and GMD has been performed,[14] the Type of Material configuration mapping results, which provides for the following possibilities: 'Books' (BK), 'Computer Files' (CF), 'Maps' (MP), 'Music' (MU), 'Continuing Resources' (CR), 'Visual Materials' (VM), and 'Mixed Materials' (MX). For each of these 7 categories there are specific values for positions 18-34 of the Fixed-Length Data Elements - General Information.

In addition to that which has been stated above in relation to a lack of parallelism for 'Manuscript language material', 'Manuscript cartographic material' and 'Manuscript notated music' categories, in this case we have the added issue that 008 also foresees the category 'Continuing resources', which does not refer to a materials category, but instead to a bibliographic condition.[15]

---

[14] "Field 008 is not repeatable and is dependent on the content of Leader/06 and Leader/07 for its definition" (Library of Congress, *MARC 21 Bibliographic Format. Relationship of Fields 006, 007, and 008*). http://www.loc.gov/marc/formatintegration.html.

[15] Inserting 'Continuing resources' among the Type of Material results in mixing materials and types of publication. Seriality is not solely applicable to resources that

GMD	**008/18-34**
Texts	Books (BK) Continuing Resources (CR)
Written (or notated) music	Music (MU)
Graphic documents	Visual Materials (VM)
Cartographic documents	Maps (MP)
Objects	Visual Materials (VM)
Sound recordings	Music (MU)
Videorecordings	Visual Materials (VM)
Electronic documents	Computer Files (CF) Books (BK) Continuing Resources (CR)
Multimedia	

Table 2: (Full version as distinct file, URL http://leo.cilea.it/index.php/jlis/rt/suppFiles/4598/0)

The chief differences are found in the GMD 'Electronic documents' category which, depending on the case in question, can be compared with three other types of material: in addition to 'Computer files', a category which one employs for "computer software (including programs, games, fonts), numeric data, computer-oriented multimedia, online systems or services". 'Books' and 'Continuing Resources' also figure in the table. Mapping performed by using of these two elements results from the fact that an electronic resource which is basically textural in nature is assigned the Type of record (Leader/06) code a, that is to say 'Language material'.

Mapping of GMD to 007 Physical Description Fixed Field - General Information

The MARC21 field 007 serves to supply "special information about the physical characteristics in a coded form" (*MARC 21 Format for Bibliographic Data* 007 - Physical Description Fixed Field - General Information);[16] in fact, each specific element is introduced by the phrase "item is a…". The Character position 00 of field 007 contains a code that identifies the category of material, even if once again we find the presence of the term 'Text', which certainly does not relate to any type of support, nor to the "Physical description". Among the characteristics accepted by 007/00 (and listed in Table 3) we find some which unquestionably refer to the intrinsic nature of the resource, whilst others identify extrinsic characteristics. Among the

possess a textual content such as newspapers, periodicals or loose-leaf publications; the 008/21 position Type of continuing resource also includes Updating databases, which include data which do not necessarily contain textual information.

[16] http://www.loc.gov/marc/bibliographic/bd007.html.

former are 'Text' and 'Map'; among the latter we find 'Electronic resource' or 'Microform'.

Therefore, when mapping between the GMD and 007/00 the difficulties pointed out above in relation to REICAT and the those relative to the Category of material are compounded.

There are a few MARC21 elements which lack parallels; these are termed 'f - Tactile material', 'o – Kit' and 'r - Remote-sensing image'. The 'Tactile material' category, which includes publications in Braille and/or Moon Alphabet, is for all practical purposes neglected by REICAT from the moment when the physical characteristics of a publication are registered, despite the fact that this plays a rather important role in the identification of the expression. For kits, i.e. a "mixture of various components issued as a unit and intended primarily for instructional purposes" (007 - Physical Description Fixed Field - General Information), the same problems arise as reported above in relation to mapping between GMD and Leader/06. Remote-sensing images — relief maps made from a distance by aircraft, satellites or ships using a special surveying technique — are not interpreted by REICAT as GMDs, but instead appear as SMDs. In reality, one is dealing with a content type and not an extrinsic physical characteristic of the resource.

Then there are some elements which, notwithstanding their apparent similarity, reveal profound differences when subjected to a close analysis.

Once again, one is dealing with the REICAT category 'Texts' and the MARC21 category 'Text'. As soon as a text, as interpreted by MARC21, is seen as such only in cases where one is dealing with Language Material which is visible to the naked eye, mapping with 'Texts' has to be performed using both 't – Text' and 'h – Microform' (Needless to say, microform resources cannot be read by the naked eye without the help of suitable optical devices). Still more

GMD	007/00
Texts	t - Text h - Microform
Written (or notated) music	q - Notated music h - Microform c - Electronic resource
Graphic documents	g - Projected graphic k - Nonprojected graphic
Cartographic documents	a - Map d - Globe h - Microform c - Electronic resource
Objects	z - Unspecified
Videorecordings	m - Motion picture v - Videorecording
Sound recordings	s - Sound recording
Electronic documents	c - Electronic resource t - Text g - Projected graphic
Multimedia	

Table 3

problematic is the issue of 'Cartographic documents', which can variously be classified as 'a – Map', 'd – Globe', 'h – Microform' or 'c - Electronic resource', from the moment the definition given in Appendix C reads: "to include publications with cartographic content, in printed or any other form, and in any format or on any support (e.g. in Microform, on CD-ROM, or accessible remotely through a network)" (*Regole italiane di catalogazione* Appendix C). In the case of 'Electronic documents' too, unambiguous mapping is not possible. In fact, this category includes "documents which require an electronic processing device" (Appendix C), but excludes sound recordings, video recordings, written music and cartographic documents. There remain, then, as possible candidates, electronic resources specifically called 't – Text' and 'g - Projected graphic'. For graphic materials, in fact, REICAT does not anticipate electronic supports, but instead printed matter or fixed projection materials. For this reason, a DVD that stores reproductions of posters or postcards necessarily fit into the 'c - Electric resource' category of materials. The GMD 'Objects', which gathers material not present in other categories can be mapped almost perfectly using 'z - Unspecified', which one uses in cases where the item concerned is not identified by one of the other 007 code values.

Mapping GMD to RDA content term and MARC codes for RDA terms (336 $a and $b)

The MARC21 is – or perhaps better to say – should be a format that is independent from the rules or standards used by other fields. Confirmation is found in the fact that in position 18 of Leader it is possible to express the Descriptive cataloguing form used (ISBD,

non-ISBD or AACR2), and that by means of the second indicator of fields 600-651 one must indicate the subject headings employed.

Recently, however, MARC21 was modified so as to bring it up to date with the new features introduced by a specific "cataloguing code", namely RDA, even if RDA does not present itself in this way. For example, the field 336 Content Type that registers the mode of communication through which a work is expressed has been added. Subfield $a posts the content type term, while subfield $b posts the indication of the source from which such terms are drawn (Library of Congress, *MARC 21 Format for Bibliographic Data* 336 Content Type).[17]

The moment the RDA content terms referred to categories different from those which were previously foreseen by MARC21, the Library of Congress produced a table to allow mapping between position 06 of Leader and field 336.[18] Precisely on account of their different meanings, the parallel is not always unambiguous (Term and Code List for RDA Content Types).[19] In fact, the RDA Content term is "a categorization reflecting the fundamental form of communication in which the content is expressed and the human sense through which it is intended to be perceived. For content expressed in the form of an image or images, content type also reflects the number of spatial dimensions in which the content is intended to be perceived and the perceived presence or absence of movement" (*Resource Description and Access* Par. 6.9.1.1). In contrast, position 06 of Leader is "Used to differentiate MARC records created for various types of content and material and to determine the appropriateness and validity of certain data elements in the record" (Library of Congress, *MARC 21 Format for Bibliographic Data* Leader).[20]

[17] http://www.loc.gov/marc/bibliographic/bd336.html.
[18] http://www.loc.gov/marc/RDAinMARC29.html.
[19] http://www.loc.gov/standards/valuelist/rdacontent.html.
[20] http://www.loc.gov/marc/bibliographic/bdleader.html.

The mapping between the GMD and the RDA content terms proposed here derives from the mapping between these elements and Leader/06.

Broadly speaking, we should remember that the RDA content type becomes one of the attributes of the expression as soon as one registers the "form of communication in which the content is expressed" (*Resource Description and Access* Par. 6.9.1.1), while the REICAT GMD refers to the manifestation named "publication" in REICAT.

REICAT Appendice C	MARC Bibliographic Leader/06 code(s)	RDA content term – 336 $a	MARC codes for RDA terms - 336 $b
Texts	a or t	Notated movement	Ntv
Texts	a or t	Tactile notated movement	Tcn
Texts	a or t	Tactile text	Tct
Texts	a or t	Text	Txt
Written (or notated) music	c or d	Notated Music	Ntm
Written (or notated) music	c or d	Tactile notated music	Tcm
Graphic documents	k	Still image	Sti
Graphic documents	k	Tactile image	Tci
Cartographic documents	e or f	Cartographic dataset	Crd
Cartographic documents	e or f	Cartographic image	Crd
Cartographic documents	e or f	Cartographic moving image	Crm
Cartographic documents	e or f	Cartographic tactile image	Crt
Cartographic documents	e or f	Cartographic tactile three-dimensional form	Crn
Cartographic documents	e or f	Cartographic three-dimensional form	Crf
Objects	r	Tactile three-dimensional form	Tcf
Objects	r	Three-dimensional form	Tdf
Sound recordings	j	Performed music	Prm
Sound recordings	j	Sounds	Snd
Sound recordings	j	Spoken word	Spw
Videorecordings	g	Three-dimensional moving image	Tdm
Videorecordings	g	Two-dimensional moving image	Tdi
Electronic documents	m	Computer dataset	Cod
Electronic documents	m	Computer program	Cop
Multimedia			

Table 4

Among the RDA content terms 'Xxx – Other' and 'Zzz – Unspecified' remain without equivalents. Whilst for 'unspecified' no mapping is foreseen with Leader/6, 'Other' could correspond to 'o – Kit' or 'p – Mixed material' which, in Table 1, show up without mapping to the GMD.

The two most important new features anticipated for the RDA

content terms are the introduction of three-dimensionality and tactility. In both cases mappings yield rather unexpected results. For example, is the mapping of a Cartographic Tactile Image or a Cartographic Tactile Three-dimensional Form using Leader/06 (that is to say 'Manuscript Cartographic Material') really possible? And can a tactile or three-dimensional expression which is embodied in a manuscript work really exist?[21] In REICAT the indication one finds that relates to a publication which presents readable content by means of tactile interaction is inserted in the Note area, but is not present in the GMD. Rule 4.7.1.4 : "Notes on the nature, genre, scope and occasion of the publication" specifies that one can indicate "the nature (type, kind, etc.) of the publication, or of the work or works it contains, when it is not derivable through other elements in the description and is important for its identification, or if it is considered useful". Among the various possible indications, one can be report that a work is a "text in Braille". If, however, it is recorded that the content types identify attributes of expressions, REICAT then consistently presents the indication "Braille" among the forms of realization which characterize the expression.

The SMD

The SMD is used in REICAT as the first element of the Physical Description Area. Appendix D lists the terms it is possible to employ to indicate "the particular category of material to which the publication belongs" (*Regole italiane di catalogazione* Par. 4.5.1.0). The application of an SMD is obligatory, except in the case of tex-

[21] The same reasoning could be applied for the expression which has as an attribute 'Cartographic dataset', or "content expressed through a *digitally* encoded dataset intended to be processed by a computer", and which materialize as manuscript cartographic materials.

tual publications composed of a single volume or a booklet, for which only the extension is reported. This demonstrates the extent to which the REICAT norms cling to a "book-centric" vision that focuses particularly on the modern printed book. The SMD indication 'volume(s)' is used for loose-leaf publications, ancient works in multiple parts, and in cases of absent/missing or irregular page numbering (4.5.1.2.A).

The SMD can be mapped using the 'Specific Material Designation' of the "Physical Description Fixed Field - General Information", position 01 of 007, but quite a number of problems will result. To clarify matters, a table is provided below which contains every SMD, with the exception of Written Music, for which SMDs are dealt with in REICAT in a specific Appendix.[22]

The most obvious problems which arise from this mapping are due to the different concepts lying behind the notion of Texts in REICAT and Text in 007/1. REICAT, in fact, presents in the SMDs those which are of a physical nature, namely the supports that can convey information in the form of a text (e.g. a folder, sheet, volume, in microform, etc.). In MARC21, on the other hand, the Text category contains mixed information, which ranges from the size of characters to the presence of a readable version suitable for the visually impaired, to physical characteristics, as the loose-leaf form rather than a bound volume.

Another problem associated with the fact that GMD Texts can include SMDs that refer to the support type is brought to light in the case of atlases. For MARC21 these are placed in the 'Map' category, whilst for REICAT their treatment raises a degree of ambiguity. In fact, the Italian rules prescribe in the Physical Description Area the necessity to consider atlases as volumes (Par. 4.5.1.4), and therefore

[22]Table 5 available as distinct file, URL: http://leo.cilea.it/index.php/jlis/rt/suppFiles/4598/0.

not to employ the specific terms foreseen for Cartographic Documents found in Appendix D. Does this mean, then, that from the moment atlases are described as volumes, they do not fit in among the Cartographic Documents? Curiously, Appendix D for Graphic Documents specifies that in the physical description area "the terms used for textual publications are used", and therefore also the term 'volume'. However, this indication is not supplied for Cartographic Documents. This omission, when added to what has already been stated in Rule 4.5.1.4, would certainly seem to assume that if a cartographic publication is described as a volume, it has to belong *a fortiori* among Texts, given that this SMD is not foreseen for Cartographic Materials. To conclude, then, for REICAT an atlas belongs among Texts, whilst for the MARC format it falls into the 'Map' category.

Conclusions

MARC21 is a format which stands independent of any rules, standards or vocabularies applicable to descriptive or semantic cataloguing. "The content of the data elements that comprise a MARC record is usually defined by standards outside the formats. Examples are the International Standard Bibliographic Description (ISBD), Anglo-American Cataloguing Rules, Library of Congress Subject Headings (LCSH), or other cataloging rules, subject thesauri, and classification schedules used by the organization that creates a record" (Library of Congress, *MARC 21 Format for Bibliographic Data* Introduction).[23]

However, for other fields – Leader and fixed-length data elements in particular – the content is defined in the format. To the

[23] http://www.loc.gov/marc/bibliographic/bdintro.html.

point, it is in cases such as these that incongruities can become apparent between the values recognized by MARC21 and those which REICAT proposes, particularly in the GMD and SMD. The mapping problem that arises with these elements is not insignificant – indeed, it results in some serious repercussions as regards the functionality of OPACs and discovery systems. While Leader/06 is used to differentiate MARC records in such a way so as to determine the appropriateness and validity of certain data elements in the record (and thus have a management value), fixed-length data elements are potentially useful for retrieval and data management purposes (008 - Fixed-Length Data Elements - General Information). The lack of coherence among the options proposed by MARC21 and REICAT's material designations can therefore deliver muddling results in the search phase and during the filtering of results. The most paradoxical example is the already mentioned case of atlases. If one performs a search, this confusing situation already emerges: SBN[24] and WorldCat[25] place atlases among Document types, Printed texts and Cartographic documents and Formats Book and Map respectively. One is not dealing so much with a problem that affects cataloguers; rather, it is users who are most affected, since when they carry out searches in catalogues they can come up with unexpected and incomprehensible results. When one contemplates the way in which the RDA content type has evolved and its reception in MARC21, and a likely future increase in carrier types and their protean changes, it would seem highly desirable that, one way or another, a satisfactory agreement be reached by all concerned. Cutter said "the convenience of the public is always to be set before the ease of the cataloger" (Cutter p. 6).

[24]Opac SBN. Advanced search. http://opac.sbn.it/opacnew/opac/iccu/avanzata.jsp.

[25]WorldCat. Advanced search. http://www.worldcat.org/advancedsearch.

Works Cited

Cutter, Charles A. *Rules for a dictionary catalog*. fourth ed. rewritten. Washington: Government printing office, 1904. (Cit. on p. 21).

Guerrini, Mauro. "MD: its function and its history". *Cataloging & Classification Quarterly* 38.2. (2004): 61–74. (Cit. on p. 5).

ICCU. *Circolare per l'applicazione delle REICAT in SBN*. 2010. (Cit. on p. 2).

—–. *Commissione RICA*. 2011. http://www.iccu.sbn.it/opencms/opencms/it/main/attivita/gruppilav\protect_commissioni/pagina\protect_94.html.

—–. *Documentazione Specifiche SBN-MARC*. 2011. (Cit. on p. 2).

Library of Congress. *MARC 21 Bibliographic Format. Relationship of Fields 006, 007, and 008*. 12th ed. 2010. (Cit. on pp. 6, 10).

—–. *MARC 21 conciso bibliografico*. 7th ed. 2006. (Cit. on pp. 6, 7).

—–. *MARC 21 Format for Authority Data*. 12th ed. 2010.

—–. *MARC 21 Format for Bibliographic Data*. 12th ed. 2010. (Cit. on pp. 12, 13, 16, 20, 21).

Regole italiane di catalogazione: REICAT. Roma: ICCU, 2009. (Cit. on pp. 4, 5, 8–10, 15, 18, 19).

Resource Description and Access: RDA. Chicago: ALA Editions, 2011. (Cit. on pp. 3, 16, 17).

About

The author

Agnese Galeffi
Scuola Vaticana di Biblioteconomia
Email: agnese_g@hotmail.com

The paper

ACKNOWLEDGMENT: This article represents a thorough revision and expansion of a paper that was originally delivered at the 3rd Meeting

of the MARC 21 Users' Group, which took place on November 26th, 2010 at the European University Institute, Fiesole (FI), Italy. The quotes drawn from chapters 0-3 and 8-14 of REICAT originate from the official English translation posted on the ICCU's website http://www.iccu.sbn.it/opencms/export/sites/iccu/documenti/ReicatEN.pdf. The remainder of the English language text represents the work of my translator Mark Livesey, whom I would like to thank for his close collaboration.

Date submitted: 2011-04-13

Date accepted: 2011-04-16

Links checked: 2011-04-26

Date published: 2011-06-15